



# In-Use On Road Diesel Vehicle Regulation

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In-Use Control Measures Section

California Environmental Protection Agency



**Air Resources Board**

# Need for Emissions Reductions

- Attain health based 8-hour ozone and PM<sub>2.5</sub> standards
  - Federal Clean Air Act
  - State Implementation Plan (SIP)
- Diesel particulate matter contributes to premature death, cancer and other adverse respiratory health impacts
- Mobile diesel engines are the largest source of diesel particulate matter (PM) and oxides of nitrogen (NO<sub>x</sub>) in California



# Applicability

- Diesel vehicles operating in California
  - Trucks, buses, yard trucks and other
  - Interstate, intrastate, international, and other
- Vehicles greater than 14,000 GVWR and shuttle buses
- Any person, business, or government agency who owns, leases, rents, or sells a vehicle in California
- Excludes emergency vehicles, military tactical vehicles, and personal use motorhomes

# Overview of Regulation

- Install PM controls from 2011-2014
- 2010 model year engines from 2013-2023
  - Exhaust retrofits if equivalent emissions
- Three compliance options
  - Best available control technology (BACT) schedule, or
  - Replacement and retrofit limits, or
  - Fleet average
- Special provisions, credits



# Option 1 - BACT Schedule

## No Reporting Required

| January 1st: | Engine Model Year   | Requirement |
|--------------|---------------------|-------------|
| 2011         | Pre-1994            | PM control  |
| 2012         | 2003-2004           | PM control  |
| 2013         | 2005-2006           | PM control  |
|              | 1994-1999           | Replace     |
| 2014*        | 2000-2002           | Replace     |
| 2015         | Pre-1994            | Replace     |
| 2016         | 2003-2004           | Replace     |
| 2017         | 2005-2006           | Replace     |
| 2018         | No new requirements |             |
| 2019         |                     |             |
| 2020         |                     |             |
| 2021         | 2007                | Replace     |
| 2022         | 2008                | Replace     |
| 2023         | 2009                | Replace     |

\* PM control required for all vehicles



## Option 2 - BACT Percentage Limits

- PM control
  - Highest level PM retrofit
  - Originally equipped PM filter
- Replacement
  - 2010 model year engine
  - 2004-2006 with 85% NOx reduction
  - 2007-2009 engine with 70% NOx reduction
- Requires reporting

| January 1st | PM Control | Replacement* |
|-------------|------------|--------------|
| 2011        | 25%        | NA           |
| 2012        | 50%        | NA           |
| 2013        | 75%        | 25%          |
| 2014        | 100%       | 50%          |
| 2015        | “          | 50%          |
| 2016        | “          | 60%          |
| 2017        | “          | 80%          |
| 2018        | “          | 80%          |
| 2019        | “          | 80%          |
| 2020        | “          | 90%          |
| 2021        | “          | 90%          |
| 2022        | “          | 90%          |
| 2023        | “          | 100%         |

\* Motor coaches have less stringent schedule



## Option 3 – Fleet Average

- Can be met by any combination
  - Widest variety of engine model years
  - Widest variety of NOx control options
- Emissions factors specified in regulation
- Fleet emissions targets decline
- Requires reporting



# Special Provisions Summary

- Small fleets
- Agricultural vehicles
- Retirement credits
- Early PM retrofit credits
- Lower usage
- Attainment area operation
- Unique vehicles
- PM retrofit safety
- Manufacturer delays
- Certain cab-over engine truck tractors
- Hybrid and alternative fueled vehicles credits
- Three day pass
- School buses
- Motor coaches
- Two engine sweepers



# Small Fleets

- Three 3 vehicles or less
- No clean-up requirements before 2014
- All must have PM control\*
- One 2004-2006 MY engine good until 2019
- 2010 engine in fleet delays action for other truck
  - Two trucks; delays replacement of 2<sup>nd</sup> until 2017
  - Three trucks; delays clean-up of 3<sup>rd</sup> until 2016
- Reporting starts in 2011



\* Exception for three vehicle fleet with a 2010 engine.

# Low Mileage NOx Provisions

- Truck tractors and vehicles with GVWR over 33,000 lbs. operated less than 7,500 miles\*
- Smaller vehicles operated less than 5,000 miles\*
- PM filters 2011-2014
- No replacements until 2021
  - 2010 engines 2021-2023
- Subject to reporting requirements

\* Hours limitation applies for yard goats and vehicles using PTO to perform work while stationary.

# Special Provisions (Continued)

- Any vehicle operated exclusively in attainment areas
- PM filters 2011-2014
- No replacements until 2021
  - 2010 engines 2021-2023
- No mileage limits
- GPS tracking
- Reporting required



Attainment Area Counties - Alpine, Colusa, Del Norte, Glenn, Humboldt, Lake, Lassen, Mendocino, Modoc, Monterey, Plumas, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz, Shasta, Sierra, Siskiyou, Trinity, Tehama, and Yuba

# Agricultural Vehicles

- Used exclusively in agricultural operations
- Exempt below mileage thresholds
  - 15,000/20,000/25,000 annual miles until 2017
  - 10,000 annual miles until 2023
- Specialty farm vehicles exempt until 2023
- All trucks cleaned up by 2023
- Reporting required January 2010



# School Buses

- PM requirements 2011-2014
  - Pre-1977 bus replacements
- Different BACT compliance schedule
- Same flexibility provisions
- \$200 million in Lower-Emission School Bus Program funding



# Reporting and Disclosure

- Initial reporting required by January 31, 2011 and each subsequent compliance year thereafter.
- Early Reporting Required for vehicles claiming Agricultural and retirement credits exemptions by January 2010.
- No reporting for BACT compliance schedule
- Dispatcher required to ensure vehicle meets regulatory requirements
- Requirement for regulation disclosure on bill of sale
- Leased Fleet Requirement – can exclude vehicle from leasing entity fleet if lease duration is 1 year or more and responsibility for compliance written into contract

# Calculator

- Excel spreadsheet available to assist fleet owners in determining potential compliance paths.

Microsoft Excel - Fleet\_Calculator\_08-1210.xls

File Edit View Insert Format Tools Data Window Help

75%

Statewide Heavy Duty Truck & Bus Fleet Calculator V.4

Meet any combination of compliance options for PM and NOx by January 1 of each year

ARB Help Hotline 1-866-634-3735

Meet any one of three options

| Option                    | PM                                  |
|---------------------------|-------------------------------------|
| Option 1 - BACT Schedule  | Comply                              |
| Option 2 - Percent Limits | Projected Fleet 0%<br>Goal 25%      |
| Option 3 - Fleet Average  | Projected Fleet 0.647<br>Goal 0.569 |

# of vehicle used in x limit & fleet average calc. 14

Complies With Requirements Meets Option(s)

2011

| Vehicle ID | Existing Engine Model Year | Projected Engine Model Year | Heavy-Duty or Tractor (Y or N) | Exemptions (Select) | Emission Control |             | Adjusted Emissions |            |
|------------|----------------------------|-----------------------------|--------------------------------|---------------------|------------------|-------------|--------------------|------------|
|            |                            |                             |                                |                     | PM Control       | NOx Control | PM Factor          | NOx Factor |
| 1          | 2010                       | 2100                        | Y                              |                     |                  |             | 1.81               | 22.1       |
| 2          | 2010                       | 2100                        | Y                              |                     |                  |             | 1.81               | 22.1       |
| 3          | 2010                       | 2100                        | Y                              |                     |                  |             | 1.81               | 22.1       |
| 4          | 2011                       | 2102                        | Y                              |                     |                  |             | 1.81               | 22.1       |
| 5          | 2012                       | 2102                        | Y                              |                     |                  |             | 1.81               | 22.1       |
| 6          | 2012                       | 2102                        | Y                              |                     |                  |             | 1.81               | 22.1       |
| 7          | 2013                       | 2103                        | Y                              |                     |                  |             | 1.81               | 22.1       |
| 11         | 2011                       | 2101                        | Y                              |                     |                  |             | 1.81               | 22.1       |
| 9          | 2013                       | 2103                        | N                              |                     |                  |             | 1.43               | 14.2       |
| 10         | 2013                       | 2103                        | N                              |                     |                  |             | 1.43               | 14.2       |
| 11         | 2013                       | 2103                        | N                              |                     |                  |             | 1.43               | 14.2       |
| 12         | 2011                       | 2101                        | N                              |                     |                  |             | 1.41               | 14.1       |
| 13         | 2013                       | 2103                        | N                              |                     |                  |             | 1.43               | 14.2       |
| 14         | 2013                       | 2103                        | N                              |                     |                  |             | 1.43               | 14.2       |



# Truck and Bus Regulation Contacts

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Statewide Truck and Bus Regulation - [www.arb.ca.gov/dieseltruck](http://www.arb.ca.gov/dieseltruck)